

FOR CONSIDERATION OF WORKS COMMITTEE.]

Metropolitan Sewers.

Having had occasion to consider and report upon the condition of the Parks as to drainage, I now beg leave to submit some points as to their appearance and culture.

The herbage (in Hyde Park) appeared in November very different to what it was in the early part of the summer, particularly where the clay subsoil lies near the surface.

In the spring and early summer months, the coarser grasses natural to wet land, predominate, obscuring those of better quality, which, having been nearly destroyed by the wet state of the ground during winter and spring, then appear to disadvantage, but growing up again during the summer give the herbage a better appearance and quality.

Much attention has evidently been devoted to the production of a good admixture of grasses, but the state of the drainage on those parts of the Park alluded to has had the effect of destroying the good which has been done on the surface.

The parts, to which these remarks have reference, are that part of the Park along the north of the Serpentine, and a part lying between the Magazine Barracks and the Powder Magazine.

Were the more valuable description of grasses preserved in a healthy condition during the winter, little more would be required to insure a verdant and abundant herbage at all times; and a few deep drains, well placed, would tend greatly to effect that purpose.

The description of manure now applied to the Parks consists principally of road-scrapings and sweepings, which no doubt has a good effect, though more calculated to add to the body of the soil than to act upon it as a manure; but with a thorough and efficient drainage, whatever manure may be requisite could be readily and economically supplied from the sewer which runs through the park, and the growth of the timber, as well as the appearance and value of the herbage, may be greatly improved thereby.

It may, perhaps, be worthy of consideration, whether the appearance of the Parks might not be greatly improved by mowing, instead of depasturing the herbage.

By mowing it once a fortnight or so, a more verdant and even surface would

be maintained, the gravel walks better preserved, and the value of the herbage as for stall-feeding would be considerably greater than as pasture, and the injurious effects of the rubbing of cattle and sheep upon the trees, particularly those recently planted, would be got rid of. It is a well-known fact that the rubbing of cattle or sheep upon young trees injures them.

By an efficient drainage where needed, frequent mowing, and occasionally watering from the sewer, a close, thick, soft carpet-like sward, would be maintained, much more clean, healthful, and pleasant for promenade, than pasture can be.

A ready demand would, I presume, be found for the cut grass among the cow-keepers at all times.

Annexed are estimates of the probable cost of the drainage required, and of cutting and gathering the grass (supposing it to be carted away by the purchaser), and of its annual value.

A considerable part of Hyde Park might be so treated without any new drainage; it being only in a few spots that any drainage is needed. The same remark applies to Kensington Gardens; and in both the gardens and the Park, the timber would be much improved as well as the herbage.

Appended is an estimate of the cost of laying down earthenware pipes, as shown (by double lines) on the annexed Map, for conveying water from the sewers in the Parks for the purpose of watering and manuring the ground: and also an estimate of the cost of its application, by means of hose pipes attached by plugs to the earthenware pipes, such plugs being placed all along the earthenware pipes, at suitable distances, for that purpose. It is proposed that the hose pipes shall be perforated laterally, so that the water shall flow out freely along the whole length of the pipe as it lies on the ground, by which the operation will be more quickly performed than by jets.

I have attempted an estimate of the cost of clearing out the Serpentine, and filling it up with a level bottom, so that the depth shall nowhere exceed six feet, and not so much near the shore; but not having myself taken measurements of its sectional area, my data for calculation are necessarily not quite perfect.

From such information as I have obtained, and I believe it is tolerably correct, it appears that the average depth of water and mud together does not exceed from eight to nine feet.

I estimate the quantity of mud at 87,000 cubic yards, and that when the mud is removed about 100,000 cubic yards of material will be wanted for filling, so as to reduce the depth of water to six feet at the deepest, and somewhat less near the shore; and I propose to obtain materials for that purpose by widening the surface-breadth of the water, as shown on the annexed map.

The least expensive, most expeditious, and least offensive method of removing the mud will be to flush it away with the water. I estimate the cost of doing so, inclusive of all the works connected therewith, at sixpence per cubic yard.—Perhaps it may be done for less.



My estimate will stand as follows:—

	£	s.	d.
To removing the mud, at per cubic yard, viz., 87,000 yards at 6d.	2,175	0	0
— filling up, at per cubic yard, viz., 100,000 yards at 1s.	5,000	0	0
— puddling the surface, 2½ feet deep, and imbedding it with gravel, per yard superficial, viz., 208,120 yards, at 4d.	3,468	0	0
	<u>£10,643</u>	<u>0</u>	<u>0</u>

I believe the work can be done for the above sum. To imbed the whole of the Serpentine with concrete would cost upwards of 30,000£., that is, supposing it to be laid 18 inches in depth. The quantity required would be 104,000 cubic yards; which, at 6s. per yard, amounts to 31,200£.

ESTIMATE of the cost of laying down earthenware 6-inch pipes in Hyde Park, Kensington Gardens, and the Green Park, for conveying water from the sewer for watering or manuring the Parks, as shown by the red lines on the annexed map.

The pipes to be placed in lines, about 200 yards apart, having plugs at convenient distances for attaching the hose pipes.

	£	s.	d.
To 10,200 feet of pipe, required in Hyde Park, north of the Serpentine, at 1s. 1½d. per foot	573	15	0
„ 7,062 feet south of the Serpentine, at ditto	397	4	9
„ 11,900 feet extent of pipes required in Kensington Gardens, ditto	669	7	6
„ 6,468 ditto ditto in the Green Park	363	16	6
	<u>£2,004</u>	<u>3</u>	<u>9</u>

ESTIMATE of the cost of labour in applying the liquid manure by means of pumps and hose-pipes, after the earthenware pipes have been laid down.

To engine and pumps, at 10s. per day	0	10	0
„ coals, 5s.; engine man, per day, 4s.	0	9	0
„ six labourers, at 3s. per day; ganger, 5s. per day	1	3	0
„ wear and tear of hose-pipes, at 1d. per acre	0	2	2½
	<u>£2</u>	<u>4</u>	<u>2½</u>

(Such a staff will in one day cover 26½ acres with 16 tons each.)
 (Manure, eight times a year, would amount to 13s. 4d. per annum.)

ESTIMATE of the probable cost of watering Hyde Park, Kensington Gardens,
and the Green Park, from the Sewers in the Parks.

Watering by means of pumps and hose-pipes, with a four-horse power steam engine.

	£	s.	d.	£	s.	d.
To four labourers working the jets at 3s. per day	0	12	0			
„ four boys assisting shifting pipes, &c., at 1s. 6d. per day	0	6	0			
„ one ganger, to superintend and assist, at 4s. 6d. per day	0	4	6			
„ Charge for tear and wear of hose-pipes, 10s. per day	0	10	0			
„ one man to work the engine, at 4s. per day	0	4	0			
„ coals for the engine, 4 cwt. per day, at 1s. 3d. per cwt.	0	5	0			
„ charge per day for the engine	1	1	0			

3 2 6

A staff as above will water in a day of ten hours about twenty
acres, at 3s. 1½d. per acre

3 2 6

Cost of watering say eight times in the year, amounting to
per acre

1 5 0

Cost of cutting and gathering the grass for stall-feeding
purposes.

Cutting, 2s. 6d.; gathering, 2s. per acre each cutting.—
Cut ten times a year, at 4s. 6d. per acre

2 5 0

Value of the grass for stall-feeding, cut ten times in the year.

The grass averaging 1¼ tons per acre; each cutting producing
12½ tons at 1l. 10s. per ton

18 15 0

Less that destroyed by trampling of people walking over it,
say one-fourth

4 13 9

Net value per acre £14 1 3

ESTIMATE of the cost of drains required in Hyde Park and Kensington Gardens.
Drains in Hyde Park, from six to seven feet deep.

360 rods—labour, at 2s. 6d. per rod	45	0	0
5,940 feet of 2 and 2½ in. drain pipes, at 35s. per 1,000	10	7	10
Cartage of materials	4	5	0

Carried forward £59 12 10

	£	s.	d.
Brought forward	59	12	10
Drains in Kensington Gardens.			
500 rods, six to seven feet deep—labour, at 2s. 6d. per rod	62	10	0
8,250 feet of 2 and 2½ in. drain pipes, at 35s. per 1,000 .	14	8	9
Cartage of materials	5	10	0
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	82	8	9
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Cost of drainage	142	1	7
Cost of earthenware pipes laid down for irrigation.			
In Hyde Park	970	19	9
In Kensington Gardens	669	7	6
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	1,640	7	3
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Total	1,782	8	10
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Improvement Rate to repay (with 5 per cent. interest), in 20 years, the sum of 1,782l. 8s. 10d., as above— annual payment		130	4 0
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STATEMENT of the annual amount of improvement rate and cost of irrigation, and the amount derivable from the improved herbage.

Estimated value of the herbages improved by drainage and irrigation, and cut for stall-feeding, over such parts of the Park as may be mown—say 200 acres at 14l. 1s. 3d. per acre	2,812	19	0
Annual improvement rate for 20 years, on the cost of drainage, and of laying down earthenware pipes for the purpose of irrigation	130	4	0
Annual cost of the application of sewer water to such parts of the Park as can be mown, to be watered eight times a year, with 16 tons of water each time—200 acres, at 13s. 4d. per acre	133	6	8
Cost of cutting and gathering the grass, supposing it to be cut ten times a year—200 acres, at 45s. per acre	450	0	0
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	713	10	8
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Nett Return	£2,098	19	4
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A very considerable improvement would be effected in the appearance and value of the timber, exclusive of that stated above.

G. DONALDSON.

6TH JANUARY, 1849.

The drainage contemplated in the foregoing estimates is only such as appears necessary for the removal of water where it appears near the surface.

But to drain the Park with a view to collecting the greatest possible quantity of water into the Serpentine, the cost would probably amount to 500%. more.

The quantity of water which might be collected by such means I estimate at one-half of the quantity of rain-water falling on the Park and gardens.

The average annual fall of rain for five years past being twenty-five and a half inches, and there being about 600 acres which may apparently be drained into the Serpentine, twelve inches of rain over that extent of ground amounts to 162,000,000 gallons per annum; in addition to which a considerable quantity more may be expected from springs, which have their supply without the Parks on the higher grounds.

The quantity of water in the Serpentine is under 90,000,000 gallons; and were it filled up so that the greatest depth would not exceed six feet, as some parts would not be so deep, I take five feet as the average depth, at which the total quantity of water would not exceed 68,000,000 gallons, so that the water obtainable from drains, and from the springs, would change or renew the water in the Serpentine about three times a year.

G. DONALDSON.

8th Jan. 1849.

Metropolitan Sewers.

REPORT OF MR DONALDSON

AGRICULTURAL SURVEYOR,

ON THE

STATE OF HYDE PARK

JANUARY, 1849.

REYNELL AND WEIGHT, LITTLE PULPENY STR